# Summer Research

***www.stolaf.edu/people/ceumb/research.html***

Psychology major Dean Charles '05 presents a poster summarizing his summer research on "place conditioning" in adult mice.

Brent Kudak was curious. He wondered if the control region of the mitochondrial genome might reveal biological facts about Minnesota's darter fish population that had, to date, eluded researchers. The St. Olaf junior brought his question to Assistant Professor of Biology Jean Porterfield, who gave Kudak the go-ahead to spend his summer seeking the answer for himself.

Kudak is among the hundreds of undergraduates who have participated in St. Olaf's Summer Research Program since it began in 1989. Every year about 50 math and science students stay on campus for 10 weeks in June, July and August to participate. Summer research isn't simply an extra course or an extension of regular school-year lab work. These projects are full-fledged, faculty-directed investigations designed to contribute to the scientific canon.

Chemistry major Laura Taylor '05 tests metallic compounds.

## Team Approach

Students benefit from working closely with their instructors and with one another. The collaborative nature of the summer research work helps participants develop skills they will draw upon later in life.

Increasingly, these teams are comprised of representatives from assorted academic disciplines, a reflection of what's occurring in professional scientific circles. "The most exciting new areas are those that require multiple disciplines in order to make advances," says Dave Van Wylen '80, St. Olaf professor of biology and associate dean for the natural sciences and mathematics. "For almost every field you look at, there are great benefits to gain by putting together scientists from various perspectives."

St. Olaf's summer researchers also intermingle during discussion lunches and symposium events, which underscore the importance that St. Olaf places on honing oral and written communication skills. "You can be extremely good at what you do in your lab," says Biology Professor Charles Umbanhowar Jr., "but if you can't communicate that effectively, people won't learn about what you are doing."

## St. Olaf Stands Out

Support for the Summer Research Program comes from impressive sources. St. Olaf is one of just eight colleges nationwide to receive five consecutive grants from the Howard Hughes Medical Institute's Undergraduate Science Education Program and was recently the only liberal arts college among four institutions given a particular National Science Foundation grant. Unlike many of the larger universities that receive these kinds of gifts, St. Olaf research is always guided by the core mission of training undergraduates.

"What we're doing is original," says Porterfield. "It's cutting-edge, and we publish it. However, students are also learning what it's really like to do science." ■

The summer research of biology major Brent Kudak '05 focused on darter fish.